

Polarization of Light by Cometary and Asteroid Dust Models

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We have investigated the angular distribution of scattered light by asteroid dust models using the microwave analog to light scattering facility at the Laboratory for Astrophysics at the University of Florida. The main features in the (linear degree of) polarization in the zodiacal light can be reproduced using comet dust models of the "Bird's-Nest" type. We show that the polarization also can be reasonably well reproduced using two asteroid dust models. One model is a compact aggregate of silicate and refractory materials representing interstellar grain material. This model is similar to the "Bird's-Nest" model in composition but the morphology is compacted as opposed to 90% void. A second model represents sharp corners of asteroid fragments and breccia using cubes of refractive index near $1.603 - 0.003i$.

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